REMARKS

This amendment is in response to the Office Action dated July 3, 2001. The drawings have been objected to for several informalities. Enclosed herewith are proposed drawing changes with the Figures 1 and 6 amended in red pen as suggested by the Examiner. The title of the invention has been objected to as not being descriptive. Applicants respectfully traverse this objection and thus have not revised the title. Applicants believe the title is descriptive of the claimed invention.

Claims 1-14 and 17-18 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 1-14 and 17-18 have been amended to make the claims definite by providing proper antecedent basis. The changes made to the specification and claims by the current amendment are attached hereto in a page entitled, "Version with Markings to Show Changes Made." Applicants believe the rejection is now moot in view of these amendments.

Claims 1-5 and 8-14 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by *Maffitt et al.* Applicants respectfully traverse this rejection.

Together with the structural elements, claim 1 recites means for attaching to a back of the slider/MR head which turns the slider/MR head into the slider scale package assembly with at least one interconnect pad disposed at the back of the slider/MR head. This claim thus invokes 35 U.S.C. § 112, sixth paragraph. Whatever the result might have been under prior longstanding PTO practice, it is now established that the PTO must construe functional limitations in accordance with the corresponding structure disclosed in the specification when examining patents. In re Donaldson, 29 USPQ 2d 1845 (Fed. Cir. 1999) (en banc). In the present case, it is clear that Applicants' specification describes the structure that combines a slider/MR head and a flex circuit located on the slider/MR head to make it a slider scale package assembly.

Maffitt et al. disclose thin film sliders that have an insulator pattern to provide isolation between conductive components. *Maffitt et al.* disclose placing bond pads of a read/write transducer on a top surface of the slider. As shown in Figure 4, a first link 58a extends up

through an insulator 44 and an end 58b of the first link 58a is exposed on the surface 54 of the insulator 44 for connection with the bond pad 56. The slider 40 includes at least one read/write conductive type transducer 64 disposed below an end surface of the slider 40 within the trailing end insulator 44 adjacent an air bearing surface 68 of the slider. The first link 58a is electrically connected to the transducer 64.

Maffitt et al. is like the prior art described in the Background section of the subject application that requires a three-dimensional interconnection between the bond pads of a slider/MR head and the bond pads of a head interconnect circuit. As was described in the Background section of the subject application:

> [t]he three-dimensional interconnection requires that the slider/MR head, a conductive ball, and the head interconnect circuit be available at the same time in such a small three-dimension while the slider/MR head is being bonded to the head interconnect circuit. The three-dimensional interconnection corner ball bonding technique drives expensive tooling and rigid fixturing of the slider/MR head.

(U.S. Serial No. 09/455,851, page 4, lines 3-8.)

Unlike the assembly as called for in claim 1, *Maffitt et al.* do not disclose a slider scale assembly that has a flex circuit disposed on a surface of the slider head. Instead, *Maffitt et al.* disclose bond pads located on a surface of the transducer. The bond pads are not the same as having a flex circuit disposed on the surface. One of the advantages of the invention as called for in claim 1 is that a slider scale package of a slider/MR head and a flex circuit can be placed onto a head interconnect circuit by a simple pick and place automated process. The slider scale packages are easy to implement into high volume surface mount or flip chip automated processing lines. These automated processing lines can be "off-the-shelf" and require little or no tooling for attaching the slider scale packages to HGAs. Thus, these automated processing lines drastically reduce labor and costs in assembling an HGA.

Independent claim 2 is similar to claim 1 except for it does not use the "means for" language. Claim 2 calls for, inter alia, a flex circuit attached to a back of the slider/MR head. For the reasons already discussed with respect to claim 1, Applicants believe that claim 2 is not rendered anticipated by *Maffitt et al.*

Claims 1-12 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by *Ainslie et al.* Applicants respectfully traverse this rejection. *Ainslie et al.* is similar to *Maffitt et al.* in the sense that it provides for contact pads located on a surface of a transducer. Solder connections 37 are used to join the head/slider 35 to the cables 33. As was already stated with respect to *Maffitt et al.*, contact pads are not the same as providing a flex circuit on a surface of the slider head. For at least the same reasons, claims 1-12 are believed to be patentable over *Ainslie et al.*

Claims 15-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Maffitt et al.* It is the Examiner's position that *Maffitt* teaches the invention as claimed except for a suspension and a head interconnect circuit. Applicants respectfully traverse this rejection. Independent claim 15 is similar to claim 2 in that it calls for, inter alia, a slider scale package having a slider/MR head and a flex circuit attached to a back of the slider/MR head. Thus for the same reasons already discussed above, it is believed that claims 15-20 are patentable over *Maffitt et al.*

Applicant respectfully requests examination and a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below listed telephone number.

Respectfully submitted,

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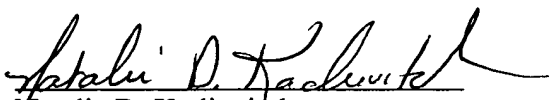
Date: Sept. 7, 2001



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the specification, the first full paragraph on page 15 has been replaced with the following re-written paragraph:

Similar to FIGs. 4-5, FIGs. 8-9 illustrate two different embodiments of interconnect pads 162 [164] for reverse polarity of the head interconnect circuit 130. The interconnect pads are disposed at the back of the package of the slider/MR head 156 and the flex circuit 158, 158' in accordance with the principles of the present invention. Except that the bond pads 162a-d are disposed at the back of the slider/MR head 156, other features in FIGs. 8-9 are generally the same as those shown in FIGs. 4-5.

Claims 1, 2, 8, 10, 17 and 18 have been amended as follows:

1. (Amended) A slider scale package assembly [for electrically coupling a slider/magnetic recording (MR) head to a head interconnect circuit in a disc drive,] comprising:

[the] a slider/MR head; and

means for attaching to a back of the slider/MR head which turns the slider/MR head into the slider scale package assembly with at least one interconnect pad disposed at the back of the slider/MR head.

2. (Amended) A slider scale package assembly [for electrically coupling a slider/magnetic recording (MR) head to a head interconnect circuit in a disc drive,] comprising:

[the] a slider/MR head; and

a flex circuit attached to a back of the slider/MR head which turns the slider/MR head into the slider scale package assembly with at least one interconnect pad disposed at the back of the slider/MR head.

8. (Amended) The slider scale package assembly of claim 3, wherein the flex circuit includes first, second, third, and fourth interconnect pads wherein the at least one interconnect pad is one of the first, second, third or fourth interconnect pads, and the slider/MR head includes first, second, third, and fourth bond pads wherein the at least one bond pad is one of the first, second, third or fourth bond pads.

10. (Amended) The slider scale package assembly of claim 9, wherein the first, second, third, and fourth interconnect pads are arranged such that the polarities of the bond pads of [the] a head interconnect circuit match with polarities from the head interconnect circuit.

17. (Amended) The HGA of claim 16, wherein the flex circuit includes first, second, third, and fourth interconnect pads wherein the at least one interconnect pad is one of the first, second, third or fourth interconnect pad, and the slider/MR head includes first, second, third, and fourth interconnect [pads] bonds wherein the at least one interconnect bond is one of the first, second, third or fourth interconnect bonds.

18. (Amended) The HGA of claim 17, wherein the first, second, third, and fourth interconnect pads are arranged such that the polarities of [the bond] pads of the [head interconnect] flex circuit match with polarities from the [head] interconnect [circuit] bonds.

Claims 21-23 are new.

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